

RESEARCH ARTICLE

Effect of a Physical Activity Program on Serum Biochemical Parameters among the Elderly Women

Seyedeh Ameneh Motallebi^a, Jamileh Amirzadeh Iranagh^{b,*} and Fatemeh Mohammadi^a

^a*Social Determinants of Health Research Center (SDH), Qazvin University of Medical Sciences, Qazvin, Iran;*

^b*Social Determinants of Health Research Centre (SDH), Urmia University of Medical Sciences, Urmia, Iran*

Abstract: Background: The present study examined the efficacy of the walking program on biochemical parameters among the elderly women.

Methods: A total of one hundred elderly women participated in this randomized clinical trial study. The intervention group attended a 24-week walking exercise meeting five times per week. The control group continued with their routine activities. The subjects were assessed in Fasting blood glucose (FBS) and lipid profile before and after 12 and 24 weeks of the program.

Results: The mean age of the elderly participants in the study was 68.33 ± 4.55 years. The results of repeated measures ANOVA showed a significant difference between the intervention and the control group in FBS, total cholesterol, triglyceride, high-density lipoprotein cholesterol, and low-density lipoprotein cholesterol after completing the program (for all $p < 0.001$).

Conclusion: The low-cost physical activity intervention could be effective for reducing chronic vascular disease risk factors among community-dwelling elderly women.

ARTICLE HISTORY

Received: November 25, 2018

Revised: January 24, 2019

Accepted: January 25, 2019

DOI:

10.2174/1574887114666190201113809

Keywords: Community-dwelling elderly women, FBS, lipid profile, physical activity.

1. BACKGROUND

Given the fast growth of the aged people, their health status becomes a concern [1, 2]. The incidence of age-related conditions has largely increased over time [3]. Ageing is accompanied by decline in both physiological and psychological functions [4]. Health problems occur more commonly with ageing which are the main reasons for the functional decline and the inability of older people to maintain simple activities of daily living [5, 6].

Cardiovascular disease (CVD) and metabolic syndrome are major public health problems worldwide [7]. Globally, the number of deaths due to CVD has increased by a third during 20 years, between 1990 and 2010 [8]. High triglyceride (TG), low-density lipoprotein cholesterol (LDL), and total cholesterol (TC) as well as reduced high-density lipoprotein cholesterol (HDL) concentrations are considered as the main factors of CVD [9]. However, the body of literature on the association between lipoprotein-lipid parameters and the risk of CVD has been advanced for the secondary prevention setting than for primary prevention [10].

Regular physical activity (PA) has been considered an effective factor for health improvement, prevention of

age-related diseases [11, 12] and enhancement of psychological well-being and physical functioning [13,14]. Regular PA plays an important role in increasing the quantity and quality of life [15]. The World Health Organization (WHO) has recently announced the physical inactivity as the fourth risk factor of [16] global mortality and as an important modifiable risk for CVD [7]. In spite of these PA-related health benefits, the majority of older people are physically inactive [17]. As 38.8% of the Iranian elderly spend their leisure time at home alone and 22.5% of them do not participate in any kind of PA [18]. Various factors are related to the level of PA in the elderly such as social, climate and cultural factors. As Iran is a multicultural country, thus the pattern of physical activity among elderly people is different in different regions of Iran [19]. Furthermore, Iranian elderly men attend the exercise program more than elderly women. Because there are some cultural barriers that limit performing exercise in public places for the Iranian women despite some similarities between the elderly in Iran and in developed countries, the cultural and religious factors should not be neglected [20].

Although many studies have supported the importance of exercise for the older population [23, 24], but there has been a relatively little number of researches examining the role of PA interventions in Iranian community-dwelling elderly population [25]. Therefore, with the increase in the number of elderly population around the globe which comes with an

*Address correspondence to this author at the Social Determinants of Health Research Centre (SDH), Urmia University of Medical Sciences, Urmia, Iran; Tel: 009844-3275-2300; Fax: 009844-3275-0047; E-mail: Jamileh.Amirzadeh@gmail.com